

REMARKS

Claim 1 is amended and claim 12 is cancelled herein. Support for the amendment to claim 1 is found in original claim 12. Hence no issues of new matter are presented. Upon entry of the Amendment, claims 1-11 and 13-21 will be all the claims pending in the application.

I. Response to Claim Rejections

A. Fujita et al

1. Response to Claim Rejections Under 35 U.S.C. § 102

Claims 1, 4, 7-11, 14 and 18 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Fujita et al.

The Examiner asserts that Fujita et al discloses a porous sheet having a porosity of 29% obtained from a compound prepared by kneading a composition comprising about 67% polypropylene based upon Example 1 at col. 6, lines 58-67. The Examiner further asserts that Fujita et al discloses a composition including polyalkylene oxide which is prepared by an addition reaction of alkylene oxide to polycarboxylic acid. The Examiner states, "since Fujita is using the same hydrophilic thermoplastic resin, i.e., polyalkylene oxide to form a porous sheet as Applicant, it is the Examiner's position that the water absorbency of the hydrophilic thermoplastic resin would be inherently present."

In applying Fujita, the Examiner interprets claim 1 as not requiring inorganic or organic fine powders. Further the Examiner does not give any patentable weight to the phrases "capable of" in claim 9, "a liquid absorber" in claim 14 and "an ink jet recording medium" in claim 18.

Applicants respectfully submit that Fujita et al does not teach all of the elements of the claimed invention as set forth in amended claim 1.

Fujita et al discloses that "a 100 μm -thick pressed sheet is prepared from a composition containing polypropylene in an amount of 67%. This pressed sheet is stirred in warm water at 60°C for 10 hours. As a result, a hydrophilic resin in the pressed sheet eluted to form a porosity of 29%." Col. 6, lines 58-67. There is no description of stretching the sheet in Fujita et al's specification at all.

On the other hand, stretching of the porous resin film of the present invention is an essential element of the claimed invention. Therefore, since Fujita et al does not disclose a porous stretched resin film as recited in claim 1 as amended, Fujita et al does not teach all of the elements of the claim and cannot be said to anticipate the claimed invention.

Accordingly, Applicants respectfully request withdrawal of the rejection.

2. Response to Claim Rejections Under 35 U.S.C. § 102/103

Claims 2, 3 and 5 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over Fujita et al as applied above. It is the Examiner's position that the recited properties in claims 2, 3 and 5 are inherent in the disclosed porous resin articles of Fujita et al.

Applicants respectfully traverse the rejection. As stated above, Fujita et al does not teach all elements of the claimed invention as recited in claim 1. Claims 2, 3 and 5 depend from claim 1 and therefore are distinguished for at least the same reasons set forth above with respect to the rejection under 35 U.S.C. § 102(b).

In addition, Fujita et al does not teach or suggest the presently claimed invention and since the pressed sheet of Fujita et al is different from the porous stretched resin film of the presently claimed invention, it cannot be said that the claimed properties are inherent or

necessarily present in the film of Fujita et al. Further, Fujita et al is directed towards methods of making ultrafine fibers and ultrafine fiber nonwoven fabrics for use in manufacturing filters, artificial leather and nonwoven fabrics, etc., which is not in the same field as the claimed invention. Therefore, one of ordinary skill in the art would not have been motivated to modify the disclosure of Fujita et al with a reasonable expectation of achieving the claimed porous resin film having the recited properties for use as a recording medium.

Accordingly, Applicants respectfully request withdrawal of the rejection.

B. Suzuki et al

Claims 1, 4, 6, 8, 9 and 12-19 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Suzuki et al.

page 12, line 11 spec.
Maintained
The Examiner asserts that Suzuki et al teaches a resin foam comprising about 50% by weight of thermoplastic resin in Example 2. The Examiner further asserts that Suzuki et al discloses that the thermoplastic resin can be a combination of polypropylene and polyvinyl alcohol (a ^{hydrophilic} hydrophobic thermoplastic resin) at col. 2, lines 20-40. The Examiner also points to various other portions of the disclosure of Suzuki et al as teaching elements recited in the dependent claims.

Applicants respectfully submit that Suzuki et al does not teach all of the elements of claim 1 as amended.

Suzuki et al discloses a process for producing a resin foam, comprising treating a resin compound that comprises thermoplastic resin particles covered with a fine hydrophilic solid powder with an aqueous medium to allow the aqueous medium to adhere to, and to be held by

the compound; melt-kneading under pressure; and then releasing the pressure to evaporate the aqueous medium, thus foaming the resin composition.

product-by-process
On the other hand, the present invention as set forth in amended claim 1, provides a stretched porous resin film having a liquid absorbing capacity of 0.5 ml/m² or more, which is prepared by kneading the hydrophilic resin under particular conditions (treatment with an aqueous medium is not carried out) and stretching. Therefore the claimed stretched porous resin film is distinguished from the resin foam of Suzuki et al.

Accordingly, Applicants respectfully request withdrawal of the rejection.

C. Yamanaka et al

1. Response to Claim Rejections Under 35 U.S.C. § 102

Claims 1, 4, 6, 7-10 and 12-21 are rejected under 35 USC 102(e) as allegedly being anticipated by Yamanaka et al.

Examiner
The Examiner asserts that Yamanaka et al discloses a stretched film comprising 70% by weight of polypropylene and 0.5 to 10 parts of the sulfonate of alkylene oxide adducts of monohydric alcohols. The Examiner also points to various portions of the disclosure as allegedly teaching elements recited in the dependent claims.

Applicants respectfully traverse the rejection and submit that Yamanaka et al does not teach or suggest all elements of the claims and therefore cannot be said to anticipate the claimed invention. Yamanaka et al does not specifically teach a thermoplastic resin comprising a hydrophilic thermoplastic resin. First, the resin composition of Yamanaka et al comprises a crystalline polyolefin resin. Further, calcium carbonate (made hydrophilic) is prepared by

treating in an aqueous medium with a sulfonate of an alkylene oxide adduct of a monohydric alcohol, and the calcium carbonate is made composite to a crystalline stretched polyolefin resin.

On the other hand, the present invention as recited in amended claim 1, provides a stretched porous resin film having a liquid absorbing capacity of 0.5 ml/m² or more, which is prepared by kneading the hydrophilic resin under particular conditions (treatment with an aqueous medium is not carried out) and stretching. Therefore the claimed stretched porous resin film is distinguished from the film of Yamanaka et al.

Accordingly, Applicants respectfully request withdrawal of the rejection.

2. Response to Claim Rejections under 35 U.S.C. § 102(b)/103

Claims 2, 3 and 5 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as allegedly obvious over Yamanaka et al as applied above. It is the Examiner's position that the recited properties in claims 2, 3 and 5 are inherent in the disclosed synthetic paper made of a stretched resin film of Yamanaka et al.

Applicants respectfully traverse the rejection. As stated above, Yamanaka et al does not teach all elements of the claimed invention as recited in claim 1. Claims 2, 3 and 5 depend from claim 1 and therefore are distinguished for at least the same reasons set forth above with respect to the rejection under 35 U.S.C. § 102(e).

In addition, Yamanaka et al does not teach or suggest the presently claimed invention and since the crystalline polyolefin resin film of Yamanaka et al is different from the porous stretched resin film of the presently claimed invention, it cannot be said that the claimed properties are inherent or necessarily present in the film of Yamanaka et al.

Accordingly, Applicants respectfully request withdrawal of the rejection.

D. Ichinose

Claims 1-6 and 13-21 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ichinose et al.

The Examiner asserts that Ichinose et al discloses an ink jet recording medium comprising a layered structure which includes a substrate, a porous inorganic particle layer and a porous resin layer, wherein the porous resin layer functions as an absorbing layer comprising inorganic particles and a water soluble polymer binder in an amount of 3 to 50% by weight.

Further, it is the Examiner's position that the recited average contact angle of 110 degrees or less in claims 2 and 3, the porosity and pore distribution in claims 4 and 5 and the particle diameter recited in claim 6, are result effective variables recognized by one of ordinary skill in the art and therefore it would have been obvious to determine the optimum workable ranges for the respective properties.

Applicants respectfully traverse the rejection.

Ichinose discloses a recording medium for use in ink-jet recording, comprising a substrate and at least one porous resin layer formed on the substrate, wherein the porous resin layer comprises heteromorphic microspheres. The process for producing the porous resin layer comprises the steps of applying a coating formulation comprising a polymer colloid, in which heteromorphic microspheres are dispersed to the substrate, and drying the coating formulation at a temperature lower than the lowest film forming temperature of the heteromorphic

microspheres, thereby forming the porous resin layer. There is no description at all that the resin layer undergoes extrusion molding or that the resin layer undergoes stretching.

On the other hand, the present invention as recited in amended claim 1, provides a porous resin film having a liquid absorbing capacity of 0.5 ml/m^2 or more, which is prepared by kneading the hydrophilic resin under particular conditions (treatment with an aqueous medium is not carried out) and molding and stretching. Therefore the claimed porous stretched resin film is distinguished from the film of Ichinose.

Accordingly, Applicants respectfully request withdrawal of the rejection.

E. Akiyama et al

Claims 1-6 and 13-21 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Akiyama et al.

The Examiner asserts that Akiyama et al discloses a printing material comprising a substrate, and a support provided on the substrate having a void layer which is analogous to the claimed porous resin film. According to the Examiner, the void layer comprises fine solid particles and a hydrophilic binder in a ratio of 1 to 10 by weight. It is the Examiner's position that it would have been obvious to one of ordinary skill in the art to discover the optimum or workable ranges for the amount of hydrophilic binder.

With respect to claims 2 and 3 the, Examiner asserts that Akiyama et al discloses that the void layer has a contact angle with water of 25 degrees. With respect to claim 4, 5 and 6, it is the Examiner's position that the recited porosity and pore distribution in claims 4 and 5 and the particle diameter recited in claim 6 are result effective variables recognized by one of ordinary

skill in the art and therefore it would have been obvious to determine the optimum workable ranges for the respective properties.

No shield
stop
Akiyama et al discloses "a printing material comprising: a support comprising a void layer with voids; and a light sensitive layer or a heat sensitive layer provided in contact with the void layer, wherein the void layer contains a hydrophilic binder and fine particles with a particle size of 0.003 to 10 μm the hydrophilic binder being gelatin or its derivative; and the void volume of the void layer is not less than 0.01 ml/m². See Claim 1 of Akiyama et al. Contrary to the Examiner's interpretation that the support having the void layer in Akiyama et al resembles the porous stretched resin film of the present invention, the void layer in Akiyama et al is obtained, for example, by coating a substrate with a coating solution containing solid fine particles and a hydrophilic binder, drying, dipping the substrate in an apparatus in an appropriate solvent to dissolve the solid fine particles, and thus forming voids.

product-by-process
On the other hand, the present invention as recited in amended claim 1, provides a stretched porous resin film having a liquid absorbing capacity of 0.5 ml/m² or more, which is prepared by kneading the hydrophilic resin under particular conditions (treatment with an aqueous medium is not carried out) and stretching. Therefore the claimed stretched porous resin film is distinguished from the film of Akiyama et al.

Accordingly, Applicants respectfully request withdrawal of the rejection.

II. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

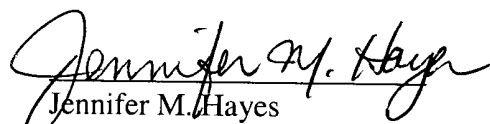
Amendment Under 37 C.F.R. § 1.111
U.S. Application No. 09/841,486

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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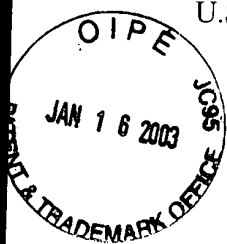
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Date: January 16, 2003



APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claim 12 is canceled.

The claims are amended as follows:

1. (Amended) A stretched porous resin film which is obtained from a compound prepared by kneading a composition comprising 30 to 100% by weight of a thermoplastic resin comprising a hydrophilic thermoplastic resin and 0 to 70% by weight of at least one of an inorganic fine powder and an organic fine powder in an intermeshing twin-screw extruder at a screw shear rate of 300 sec^{-1} or higher and which has a liquid absorbing capacity of 0.5 ml/m^2 or more as measured in accordance with the method specified in Japan TAPPI Standard No. 51-87.

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